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THE S-WEB MODEL FOR THE SOURCES OF THE SLOW SOLAR WIND

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Models for the origin of the slow solar wind must account for two seemingly contradictory observations: The slow wind has the composition of the closed-field corona, implying that it originates from the continuous opening and closing of flux at the boundary between open and closed field. On the other hand, the slow wind has large angular width, up to 60 degrees, suggesting that its source extends far from the open-closed boundary. We describe a model that can explain both observations. The key idea is that the source of the slow wind at the Sun is a network of narrow (possibly singular) open-field corridors that map to a web of separatrices (the S-Web) and quasi-separatrix layers in the heliosphere. We discuss the dynamics of the S-Web model and its implications for present observations and for the upcoming observations from Solar Orbiter and Solar Probe Plus.

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